K.T. S. P. Mandal's

Sahebraoji Buttepatil Mahavidyalaya, Rajgurunagar.

Department of Zoology

Teaching Plan

A.Y.-2020-2021(Semester II)

Course Title: Cell biology
Course Code: ZO122
Semester II

Month	Title	Teacher Name
May 1st Week	**Introduction:** 1.1 Introduction cell biology, 1.2 Cell as basic unit of life. 1.3 Importance of Cell Biology and its applications in industry. **Overview of Cells** 1.3 Introduction to Prokaryotic and Eukaryotic cells. 1.4 Structure and function of Prokaryotic *(E. coli)* 1.5 Structure and function of Eukaryotic cells (Animal and Plant Cell)	**DRB**
May 2nd Week	**Techniques in Cell Biology:** 3.1 Introduction 3.2 Microscopy: Basic Principle, Simple, Compound and applications of Electron Microscope. 3.3 Stains and dyes: Types of Stain: Acidic, basic and neutral. Dye (Preparation and chemistry of dyes not expected) 3.4 Micrometry.	**DRB**
May 3rd Week	**Plasma Membrane:** 4.1Introduction 4.2 Structure of plasma membrane: Fluid mosaic model. 4.3Transport across membranes: Active and Passive transport, Facilitated transport, exocytosis, endocytosis, phagocytosis – vesicles and their importance in transport. 4.4 Other functions of Cell membrane in brief Protection, cell	**DRB**

	recognition, shape, storage, cell signalling. 4.5 Cell Junctions: Tight junctions, gap junctions, Desmosomes.	
May 4th Week	**Nucleus: Structure and function** 5.1Introduction to Nucleus 5.2 Structure of Nucleus: Nuclear envelope, Nuclear pore complex, Nucleoplasm, Nucleolus 5.3 Chromatin: Eu-chromatin and Hetro-chromatin, nature and differences. 5.4 Functions of nucleus apparatus, Lysosomes and vacuoles.	**DRB**
June 1st Week	**Endomembrane System** 6.1 Introduction 6.2 Structure, location and Functions: Endoplasmic Reticulum, Golgi **Mitochondria and Peroxisomes** 7.1 Introduction 7.2 Mitochondria: ultrastructure and function of mitochondrion.	**DRB**
June 2nd Week	7.3 Peroxisomes **Cell Division** 7.1 Introduction 7.2 Cell cycle (G1, S, G2, M phases), 7.3 Mitosis. 7.4 Meiosis.	**DRB**

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Prof. D. R. Borhade

Course Title - Applied Zoology II
Course Code - ZO-242

Month	Title	Teacher Name
May 4th Week	**Apiculture:** 1.1 An introduction to Apiculture, Systematic position, Study of habit, habitat and nesting behaviour of *Apisdorsata*, *Apisindica*, *Apis florae* and *Apismellifera*. 1.2 Life cycle, Colony organization and Division of labour. 1.3 Bee behaviour and communication (Round Dance and Wag-Tail Dance) . 1.4 Bee keeping equipments : **a)** Bee box (Langstroth type), **b)** Honey extractor, **c)** Smoker, **d)** Bee-veil, **e)** Gloves, **f)** Hive tool, **g)** Bee Brush, **h)** Queen excluder	**DRB**
June 1st Week	1.5 Bee keeping and seasonal management. 1.6 Bee products (composition and uses) : **a)** Honey, **b)** Wax, **c)** Bee Venom, **d)** Propolis, **e)** Royal jelly, **f)** Pollen. 1.7 Diseases and enemies of Bees : **a)** Bee diseases - Protozoan (Nosema), Bacterial (American foul brood), Viral (Sac brood), Fungal (Chalk brood). **b)** Bee pests - Wax moth (Greater and Lesser), Wax beetle. **c)** Bee predators - GreenBee eater, King crow, Wasp, Lizard. 1.8 Bee pollination and management of bee colonies for pollination.	**DRB**
June 2nd Week	**2. Fisheries :** 2.2 An introduction to fisheries and its types (in brief) : Freshwater fisheries, Marine fisheries. Brackish water fisheries. 2.3 Habit, habitat and culture methods of following freshwater forms : **a)** Rohu (*Labeo rohita*) , **b)** Catla (*Catla catla*) , **c)** Mrigal (*Cirrhinus mrigala*). 2.3 Harvesting methods of following marine forms: **a)** *Harpodon*,	**DRB**

	b) Mackerel, c) Pearl oyster.	
June 3rd Week	2.4 Crafts and Gears in Indian Fishery: a) Crafts – Catamaran, Machwa, Dinghi. b) Gears – Gill net, Dol net, Rampani net, Cast net. 2.5 Fishery byproducts: a) Fish meal, b) Fish flour, c) Fish Liver oil, d) Fish manure, e) Fish fin soup. 2.6Fish preservation technique: a) Chilling, b) Freezing, c) Salting, d) Drying, e) Canning	**DRB**

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